

# 機械学習と哲学

## 機械学習

### 機械学習

Causation  
機械学習の基礎概念  
原因と結果

機械学習の基礎概念  
原因と結果

機械学習の基礎概念  
原因と結果 causation  
機械学習の基礎概念  
原因と結果

機械学習の基礎概念  
Universal Approximation  
Theorem □ Nash Embedding Theorems  
word-embedding vector  
space

機械学習の基礎概念  
Axiom of Choice

機械学習の基礎概念  
Axiom of Choice

### 機械学習と哲学

機械学習と哲学  
Turing Test

Turing Test □ AlphaGo  
dataset  
機械学習と哲学

機械学習と哲学  
Turing Test

AlphaGo Zero □ superhuman  
AlphaGo  
AlphaZero  
MuZero  
機械学習と哲学

機械学習と哲学  
free will □ causation  
機械学習と哲学

无人驾驶汽车已经准备就绪 SAE level 4 Alphabet/Waymo 已经准备就绪 SAE level 4 Alphabet/Waymo 已经准备就绪

Reward Is Enough 『奖励足够奖励』 reward 『奖励』 reward 『奖励』 reward 『奖励』 reward 『奖励』 reward 『奖励』 Reward 『奖励』

causation

Universal Approximation Theorem □ Nash Embedding Theorems □  
Word-embedding Vector Space □

深度学习和强化学习  
deep learning and reinforcement learning

reward

A horizontal row of 20 empty rectangular boxes, likely for writing names or labels, arranged in a single row.

# Universal Approximation Theorem selfish gene

逻辑实证主义  
logical positivism \ logical empiricism \ Positivism \ empiricism

Category Theory causation law critique

批评 critique Critique □ Word-embedding Vector Space □

Peano axioms

causation  
Dirac Delta Function □ Strange Attractor □□□

Algorithmic singularity  
Algorithmic singularity

Algorithmic singularity

Algorithmic singularity

**1** AlphaGo Zero သိပ္ပါယ်များ၊ AlphaGo သိပ္ပါယ်များ၊  
Algorithmic singularity

Deepmind သူ AlphaGo Zero သိပ္ပါယ်များ၊ AlphaGo သိပ္ပါယ်  
Algorithmic singularity

**2** AlphaGo Zero သိပ္ပါယ်များ၊ AlphaGo သိပ္ပါယ်များ၊  
Algorithmic singularity

**3** AlphaGo Zero သိပ္ပါယ်များ၊ AlphaGo သိပ္ပါယ်များ၊  
Algorithmic singularity  
Algorithmic singularity

**4** AlphaGo Zero သိပ္ပါယ်များ၊ Axiom of Choice သိပ္ပါယ်  
Algorithmic singularity  
Algorithmic singularity

Algorithmic singularity  
Algorithmic singularity  
Algorithmic singularity  
Algorithmic singularity

Algorithmic singularity  
Algorithmic singularity  
Algorithmic singularity  
Algorithmic singularity  
Algorithmic singularity

Algorithmic singularity  
Algorithmic singularity  
Algorithmic singularity

Algorithmic singularity  
Algorithmic singularity  
Algorithmic singularity

Algorithmic singularity  
Algorithmic singularity  
Algorithmic singularity

Leukotomy သိပ္ပါယ်များ၊ selfish gene သိပ္ပါယ်များ၊ Technological  
Singularity၊ AlphaGo Zero သူ superhuman performance၊ potentially a meta-solution  
to any problem၊ Reward Is Enough သိပ္ပါယ်များ၊ superhuman သိပ္ပါယ်များ

Algorithmic singularity  
Algorithmic singularity

Solyndra სილინდრა arXiv არქივი arXiv არქივი

□ □ □ □ □ □ □ □ □ □

## 1.

### 3. Chaitin's constant

#### 4. □□□□□□□□□□□□□□□□□□

## B

## 6. សំគាល់សំគាល់សំគាល់សំគាល់សំគាល់relevance theory សំគាល់សំគាល់សំគាល់សំគាល់សំគាល់

## 7. မြန်မာနိုင်ငြာနှင့် မြန်မာနိုင်ငြာ

9. Demis Hassabis 『AlphaGo が持つ直感 intuition』 intuition とは Demis Hassabis が『AlphaGo が持つ直感 intuition』AlphaGo が持つ直感 intuition』 a meta-solution to any problem』

**10. AlphaGo** Nature superhuman performance

C. □□□□□□□□□□□□

**12.** សំណើលើកទីនៅក្នុង motif និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**13.** សំណើលើកទីនៅក្នុង “truth” និង truth និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**14.** សំណើលើកទីនៅក្នុង The Selfish Gene និង The Immortal Gene និងការបង្កើតរឿងរាល់

**15.** សំណើលើកទីនៅក្នុង Freeman Dyson និង Birds and Frogs និង birds និង frogs និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**16.** សំណើលើកទីនៅក្នុង Austrian School of Economics និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**17.** សំណើលើកទីនៅក្នុង selfish gene និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**D.** សំណើលើកទីនៅក្នុង:

**18.** សំណើលើកទីនៅក្នុងការបង្កើតរឿងរាល់

**19.** សំណើលើកទីនៅក្នុងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**20.** សំណើលើកទីនៅក្នុង “ទីនៅ” និងការបង្កើតរឿងរាល់ “ទីនៅ” និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**21.** សំណើលើកទីនៅក្នុងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**22.** សំណើលើកទីនៅក្នុង Turing Test និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់ SAE level 4 និង level 5 និងការបង្កើតរឿងរាល់

**23.** សំណើលើកទីនៅក្នុង word-embedding vector space និង encoder-decoder, attention, transformer, BERT និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់

**24.** សំណើលើកទីនៅក្នុង deep-learning និង deep residual networks និង generative adversarial networks, etc. និងការបង្កើតរឿងរាល់

**25.** សំណើលើកទីនៅក្នុង Universal Approximation Theorem និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់ overfitting និង underfitting និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់ chaos phenomena និងការបង្កើតរឿងរាល់

**26.** សំណើលើកទីនៅក្នុង reward និងការបង្កើតរឿងរាល់នៃការបង្កើតរឿងរាល់ Reward Is Enough និងការបង្កើតរឿងរាល់

**27.** ဗိုလ်ချုပ်၏  
selfish gene ပုဂ္ဂန်း၏  
အကြောင်းအရာ

**28.** ဗိုလ်ချုပ်၏  
အကြောင်းအရာ

**E.** ဗိုလ်:

**29.** ဗိုလ် O.J.Simpson ၏  
အကြောင်းအရာ

**30.** ဗိုလ်၏  
reward အကြောင်းအရာ

အကြောင်းအရာ

အကြောင်းအရာ Freeman Dyson ၏  
အကြောင်းအရာ

အကြောင်းအရာ AlphaGo ၏  
အကြောင်းအရာ

အကြောင်းအရာ “အောင်” ၏  
အကြောင်းအရာ

အကြောင်းအရာ

အကြောင်းအရာ “အောင်” ၏  
အကြောင်းအရာ

အကြောင်းအရာ AlphaGo ၏  
Nature အကြောင်းအရာ

အကြောင်းအရာ SAE level 5 ၏  
SAE level 4 အကြောင်းအရာ

အကြောင်းအရာ AlphaGo ၏  
အကြောင်းအရာ

အကြောင်းအရာ

အကြောင်းအရာ

□ □ □ □ □ □ □ □ □ □

## ANSWER

A horizontal row of 20 empty square boxes for writing names.

Deepmind が Reward Is Enough と宣言した。この論文は、機械学習の研究者たちに大きな衝撃を与えた。

4 of 4

causation

causation

A horizontal row of 12 empty square boxes, each with a black border, intended for a child to draw a picture in each box.

Softbank 旣 Aldebaran Robotics 旣 Pepper 旣 Google X 旣 Softbank 旣  
Hyundai 旣 Boston Dynamics 旣

Passion Pepper superhuman Superhuman

context game regulated

passion

Demis Hassabis of Deepmind potentially

a meta-solution to any problem

A meta-solution to any problem

metaphysics

Stanford Encyclopedia of Philosophy

metaphysics

“The word ‘metaphysics’ is notoriously hard to define.”

Deepmind

metaphysics

a meta-solution to any problem

physics

metaphysics

physics

metaphysics

metaphysics

Deepmind

a meta-solution

Deepmind

physics

metaphysics

metaphysics

metaphysics

Deepmind

metaphysics

Deepmind

metaphysics

Stanford Encyclopedia of Philosophy

Regularity and Inferential Theories of Causation

metaphysics

metaphysics

metaphysics

Stanford University

The Metaphysics Research Lab

Stanford Encyclopedia of Philosophy

lab

lab

metaphysics

Stanford Encyclopedia of Philosophy

metaphysics

metaphysics

metaphysics

metaphysics

metaphysics

metaphysics

metaphysics

“metaphysics”

“metaphysics”

•

metaphysics

metaphysics

metaphysics

Stanford Encyclopedia of Philosophy

Regularity and Inferential Theories of Causation

premise, context, set, maximize

causation

context

context

context

**Avi Loeb**

Avi Loeb

Scientific American

A

B

C

D

civilization

A

civilization

civilization

civilization

Creator

civilization

Avi Loeb

Avi Loeb

civilization

independent of its host star

B

文明 B civilization

independent of its host star B civilization

people people